

REMARKS

Claims 1-60 are pending.

I. SECTION 112, FIRST PARAGRAPH REJECTIONS

Claims 26-60 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors at the time the application was filed had possession of the claimed invention.

The Examiner asserts that "There is no support in the original specification for manufacturing a disk drive as recited in claims 26-60."

Claim 26 recites "A method of making a disk drive, comprising the following steps in the sequence set forth: positioning a head relative to a disk; directing a gas at the disk while rotating the disk such that the gas is dragged across the head between the head and the disk and while electrically testing the head using the disk; and sealing the head in the disk drive." Claims 41 and 51 recite similar limitations. Applicant presumes claims 26-60 are rejected for the same reason, and therefore claim 26 will be discussed.

The Specification illustrates the present invention as follows:

This invention relates to methods and devices for testing heads for use in sealed hard drive assemblies. (Page 1, lines 1-2) (Emphasis added)

Recently, proposals have been made to design sealed hard drive assemblies (HDAs) that enclose a pure helium atmosphere. It is necessary to test heads that are to be used in sealed HDAs using standard single head dynamic electrical testing (DET). Because the environment in which a head is used affects the way that it will perform, e.g., by changing the flying height of the head, testing should be done with the head in a helium atmosphere. (Page 1, lines 17-22) (Emphasis added)

The invention provides methods and devices that allow heads to be tested in a helium environment in a cost-effective way with little or no impact on test time and with minimal consumption of helium. In some implementations, the helium environment adds only a penny or less to the cost of a sealed drive. (Page 2, lines 10-13) (Emphasis added)

In one aspect, the invention features a method of testing a head to be used in a sealed disk drive, including directing a flow of a gas across the head while subjecting the head to electrical testing. (Page 2, lines 14-16) (Emphasis added)

In another aspect, the invention features a device for testing a head to be used in a sealed disk drive to read/write data of a storage disk. The device includes a manifold having at least one opening for providing a flow of gas from a source of gas, the at least one opening being positioned to direct the flow of gas to a surface of a storage disk positioned adjacent to the head. (Page 2, line 29 to page 3, line 3) (Emphasis added)

Fig. 1A is a diagrammatic perspective view of a helium injection manifold on a Guzik HGA holder. (Page 3, lines 8-9) (Emphasis added)

Fig. 1A shows a manifold 30 for providing a helium layer between the air bearing surface 20 of a head (or "slider") 12 and the surface 18 of disk 10 (Fig. 1; the direction of disk movement is indicated in Fig. 1A by the arrow labeled "Disk Velocity".) The manifold 30 is mounted on a Guzik Head Gimbal Assembly (HGA) holder 33. The helium layer 34 (Fig. 2) is localized to the slider-disk boundary layer. The helium is delivered through square tubing 16, e.g., brass tubing. Helium is fed from the lower left (the area labeled "Helium In"). (Page 3, lines 22-27) (Emphasis added)

The flow rate of helium in the previous experiments was approximately 50 cubic feet per hour (approx. 0.4 liters per second). In mass production typical DET test time is less than 30 seconds of actual on-disk time, and in fact most tests can be performed in less time than that. Assuming the helium only needs to flow for 15 seconds per head, the volume of helium required is about 0.2 ft³ (5.7 liters) per head. This is summarized in Table 4. (Page 8, lines 1-5) (Emphasis added)

For example, an alternate manifold configuration is shown in Figs. 7-7C. Manifold assembly 100 includes a body 101 having an inlet 102 constructed to receive a fitting for delivery of gas to the manifold. Inlet 102 may be threaded to allow the fitting to be screwed onto the manifold assembly. Inlet 102 is in fluid communication with an angled bore 104 which is constructed to deliver gas from the inlet 102 to the U-shaped manifold 106. Bore 104 extends at an angle. The U-shaped manifold 106 includes a plurality of apertures 108, through which gas is delivered to the disk surface. Angled bore 104 is preferably formed by machining a trough in the body 101, and covering the trough with a cover that is secured in place, e.g., with adhesive. This two-part construction allows the manifold assembly to be relatively small and have a low profile, allowing the manifold assembly to fit in the fixturing that holds the HGA on different testers, both DET and fly-height testers. (Page 9, lines 2-12) (Emphasis added)

Thus, the Specification makes abundantly clear that the inventors contemplated testing a head to be used in a sealed disk drive using an external test apparatus, such as a Guzik HGA holder with a manifold to direct helium between the head and the disk during electrical testing.

The Specification illustrates the steps of (1) positioning a head (to be used in a sealed disk drive) relative to a disk, and then (2) directing a gas at the disk while rotating the disk such that the gas is dragged across the head (to be used in a sealed disk drive) between the head and the disk and while electrically testing the head using the disk.

The Specification also conveys a subsequent third step of (3) sealing the head in a disk drive. In other words, since the head being tested is to be used in a sealed disk drive, the step of sealing the head in the disk drive after performing the test is inherent, and further statements in this regard are not only unnecessary but also redundant and unenlightening.

The Specification also conveys that the head is tested while a head gimbal assembly (HGA) that contains the head is mounted on an external test apparatus, and then the head is used in a sealed disk drive. In other words, since the head is tested and then used in a sealed disk drive, making (or manufacturing) the disk drive is inherent, and further statements in this regard are not only unnecessary but also redundant and unenlightening.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention (M.P.E.P. § 2163).

An adequate written description of the invention may be shown by any description of sufficient, relevant, identifying characteristics so long as a person skilled in the art would recognize that the inventor had possession of the claimed invention (M.P.E.P. § 2163).

If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met (M.P.E.P. § 2163).

The subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure (M.P.E.P. § 2163).

The Examiner has the initial burden, after a thorough reading and evaluation of the content of the application, of presenting evidence or reasons why persons skilled in the art would not recognize that the written description of the invention provides support for the claims (M.P.E.P. § 2163).

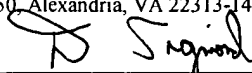
In this instance, those skilled in the art would have no difficulty understanding that the inventors contemplated a manufacturing process that includes testing the head and then sealing the head in a disk drive. Moreover, the Examiner has not even attempted to present evidence or reasons why those skilled in the art would not recognize this.

Therefore, Applicant requests that these rejections be withdrawn.

II. CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 12, 2003.

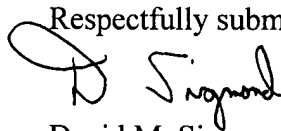


David M. Sigmond
Attorney for Applicant

11/12/03

Date of Signature

Respectfully submitted,



David M. Sigmond
Attorney for Applicant
Reg. No. 34,013
(303) 702-4132
(303) 678-3111 (fax)